Appl. No.: 10/689,784
Amendment Dated January 24, 2005
Reply to Office Action of October 18, 2005

Amendments to the Claims:

1. (Cancelled)

2. (Previously Presented) A device according to claim 22, wherein said light extracting means are realised at least in a part of the lower and upper mirrors and the generating layer and the conversion layer in the form of a diffracting tridimensional structuration with dimensions selected based on at least the wavelength of the photons in the guided mode.

3. (Previously Presented) A device according to claim 2, wherein said structuration substantially defines a photonic quasi-crystal of holes or columns constituting diffracting elements, with dimensions of about the wavelength of photons in the guided mode.

4. (Previously Presented) A device according to claim 3, wherein said quasi-crystal is a tiling of convex substantially jointed polygons and sharing each of their edges with an unique neighbour, said size of the edges being substantially equal to a selected average value, with a percentage close to within approximately +15% and -15%.

5. (Previously Presented) A device according to claim 4, wherein said tiling is constituted of substantially equal proportions of squares and equilateral triangles, or of first and second angular rhombs with different apexes, with substantially equal-sized edges.

6. (Previously Presented) A device according to claim 4, wherein said tiling is constructed by periodisation of a pattern including a selected number of equilateral triangles and squares, or first and second angular rhombs with different apexes.

7. (Previously Presented) A device according to claim 4, wherein said tiling is constructed by Stampfli inflation of a pattern comprising a selected number of equilateral triangles and squares, or first and second angular rhombs with different apexes.

8. (Previously Presented) A device according to claim 4, wherein said tiling is constructed by a substantially random distribution of selected proportions of equilateral triangles and squares, or of first and seconds angular rhombs with different apexes.

9. (Previously Presented) A device according to claim 4, wherein said tiling is twisted so as to surround at least partly said generating means and said converting means.

10. (Previously Presented) A device according to claim 4, wherein said tiling is curved so that it can extend over at least a part of an annular area.

11. (Previously Presented) A device according to claim 4, wherein said quasi-crystal is a tiling in which at least one of the diffracting elements is omitted so as to form a structure of the amorphous type.

12. (Previously Presented) A device according to claim 22, wherein the upper mirror is of the semi-reflective type and constituted by an interface between the hole generating means and an upper layer of another material.

13. (Previously Presented) A device according to claim 12, wherein said other material is selected from a group comprising air, epoxy and a material forming the substrate.

14. (Previously Presented) A device according to claim 22, wherein the lower mirror is a reflective mirror of the Bragg's mirror type placed on the substrate.

15. (Previously Presented) A device according to one claim 1, wherein the converting means and a part at least of the generating means are constituted of materials selected from a group comprising semiconductors and organic electroluminescent materials.

16. (Previously Presented) A device according to claim 15, wherein said organic materials are selected from a group comprising organic polymers, conjugated or not, and organometallic complexes.

17. (Previously Presented) A device according to claim 15 wherein said semiconductors are selected from a group consisting of silicon, gallium-, aluminium-, indium-, nitrogen-, phosphorus-, arsenic- and antimony-based compounds, as well as their alloys.

18. (Previously Presented) A device according to claim 15 that comprises i) an ordered stacking of GaAs substrate, alternating layers of GaAs and AlAs forming said second mirror, a n doped GaAs layer, forming a part of the generating means, an active layer constituted of two AlGaAs barriers framing a quantic well in InGaAs and forming said converting means, a n doped GaAs layer forming another part of the generating means as well as said first mirror with a layer of outer air, and ii) a first means of electric contact to enable the p doped GaAs layer to be placed under a positive polarisation and a second means of electric contact suitable to place the n doped GaAs layer to be placed under a negative polarisation.

19. (Previously Presented) A device according to claim 22, wherein the upper and lower mirrors define an asymmetric resonant cavity of the Fabry-Pérot type.

20. (Previously Presented) A device according to claim 22, wherein the upper and lower mirrors define an anti-resonant cavity with the wavelength of the photons emitted by the converting means.

21. (Previously Presented) An electroluminescent diode, comprising a device according to Claim 22.

22. (Previously Presented) An electroluminescent device comprising a substrate, a lower mirror carried by the substrate, an electron generating layer formed on the lower mirror, a

conversion layer formed on the electron generating layer, a hole generating layer formed on the conversion layer, an upper mirror on the hole generating layer, said conversion layer converting electron-hole pairs into photons and said lower and upper mirrors ensuring containment of the photons presenting at least a selected wavelength associated to a guided propagation mode, and light extraction means arranged in the periphery of the said generating and conversion layers and communicating with at least a part of the generating and conversion layers to extract at least a part of the photons in the guided mode from the said generating and conversion layers.

23. (New) A device according to claim 2, wherein said extracting means are realized at least in a part of the hole generating layer and of the conversion layer.

24. (New) A device according to claim 2, wherein said extracting means are realized at least in a part of the election generating layer, of the conversion layer and of the hole generating layer.

25. (New) A device according to claim 2, wherein said extracting means are realized at least in a part of the election generating layer, of the conversion layer, of the hole generating layer and of the upper mirror.